

S T A I R S  
*and Stair Parts*  
*for Better Built Homes*





# *Stairs & Stair Parts*



*For Better Built Homes*

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*Curtis Companies Service Bureau  
Clinton, Iowa*

## *Stairs & Stair Parts*

IN every two-story house the most important interior architectural feature is the stairway. It is the largest item of woodwork in the home.

The stairs are seen by everyone who comes into the home, for they are almost always placed in the most prominent location that could possibly be given them, being either in the hallway near the entrance or in one end of the living room. If they have any defects in construction or design these are quickly noticed.

Curtis stairwork is offered in two forms: as stair material for the carpenter to fit and put together, and as complete stairs; i. e., with parts already cut-to-fit ready for assembling. The latter method of ordering stairs is recommended. It is more economical for all—for the owner, the carpenter, and the dealer. It costs a little more, of course, than the aggregate cost of the individual parts, but the saving effected in the carpenter's labor more than makes up for the difference. This is because Curtis complete stairs are factory-made, and the labor required to cut and fit them on the job is reduced to the minimum. Furthermore, the complete stairs give greater satisfaction, for there is no waste of material in the cut-to-fit parts, and mistakes in putting them together are not frequent.

If you are thinking of building a new home or of installing a new stair in your old home, give your stair the most careful consideration, because each day's contact with poorly-constructed and ill-designed stairs only serves to bring continuous dissatisfaction. The stairs should not be left to the untrained mind to design or unskilled hands to construct.

Equally important with the design of the stairway is its construction. The stairs receive more and rougher usage than any other part of the house, since people going up and down stairs necessarily tread heavily upon the steps, which are also frequently subjected to heavy loads. Curtis stairs have strength and stability built into them.

Stairways are of two general types, "open" and "boxed." The latter adds no feature of beauty to the home but serves merely as a means of reaching the second floor. Thus, the box

stair does not dominate your hall, or your living room, since it is hidden between two walls. This obviates draughts and simplifies the heating of the halls.

Open stairs are of two kinds, "open string" and "curb string." The open string stair shows the ends of the treads and risers, while the curb string conceals these from view. Colonial houses with their wide, long halls, would seem queer without their long, open string stairways with white spindles and mahogany hand rails. Houses of the English type employ open string stairways, though the curb string stair is also appropriate. The type of stair used in the Western house matters little so long as the design is good.

The stairs that are really admired are those of nice proportions, finely formed parts and graceful lines. These things constitute beauty in design, one of the three essentials of the perfect stairway. The other two essentials are sound materials and good workmanship. These three factors have been incorporated with remarkable success in Curtis stairways.

## *Standardized Construction of Curtis Stairways*

The material used in making all Curtis stairs is carefully selected. Only those pieces are used which are sound in every way and that match in color and grain. However, the most careful selection of stock is of no avail if, after it is put in use, it warps, cracks, or pulls out of shape. This will surely happen if the wood is not thoroughly seasoned. Seasoning increases its strength and its hardness. All material in Curtis stairs is thoroughly seasoned by the scientific process of kiln-drying. This process also reduces the weight, rendering the wood less liable to shrinkage and more resistant to decay.

The various parts come to the builder thoroughly machined and cut to the required sizes. Nearly all the work usually done by the carpenter before erecting the stairs has already been done in the factory. Therefore, a Curtis stair can be assembled on the job in much less time than any other kind of stair. The following are some of the construction features that make this possible.

The stringers are housed by an electrically-operated machine which accurately and smoothly cuts out the grooves for the ends of the treads and risers, and rounds out the "housing" so as to accommodate exactly the nosing on the treads, as shown in Figures 1 and 2.

Treads and risers are not nailed into the wall stringers but they are *wedged*. Figure 3 is a picture taken from under a tread and riser showing how these wedges are driven in from the back of the stairway. These wedges draw the treads and risers into the stringers so that the joints are completely closed. Since these joints cannot open and since no nails are used in them, a handsome stairway is the result.

The treads and risers are tongued and grooved together as seen in Figure 4. Thus they cannot "give" and when they do not give, they will not squeak. No toe-nailing is used, hence there are no split edges or unsightly nail head holes. Note that the tread fits completely over the riser beneath it, while a rabbet is cut on the back edge of the tread to fit into a groove along the lower edge of the next riser.

Face stringers are tenoned to fit into a mortise in the corner or landing newel, shown in Figures 5 and 6. Observe that the corner at the bottom of the stringer is cut out or notched, so as to insure a snug connection between the stringer and the newel. On the inside of the stairway where it cannot be seen, the stringer is fastened securely to the newel by means of a cleat.

The cleat is already glued and screwed to the stringer so that all the carpenter has to do is to screw the cleat to the newel. Figure 6 also shows how the face stringer is mitered for the risers, so as to pro-

Fig. 1.  
Stringers  
housed like  
this save a tre-  
mendous amount  
of work on the job.



Fig. 2.  
The hous-  
ing is round-  
ed on the ends to  
exactly fit the nosing  
on the treads.



duce a joint between the stringer and riser where no end grain wood will show. Face stringers so mitered, accurately and smoothly, save the carpenter this labor on the job.

Round starting newels and balusters on Curtis stairs are dowel-pinned to the solid built up starting tread (Fig. 7). Square starting newels (Fig. 8) are anchored to the starting tread by means of a mortise-and-tenoned joint, enabling the newel to furnish a stable support for the balustrade and protection for the stairway. When the stairs are received the tenons are already cut and the holes already bored for the round newels and balusters, and the mortise in the tread needs but to be cut and the tenon on the square newel fitted by the carpenter.

A distinctive feature of Curtis Woodwork is used to add beauty and good construction to Curtis square newels. This is the Curtis lock-miter joint, which you will see in Figure 9. No nails that mar the finished surface of the newel are used and there is no ugly contrast between flat and edge grain at the corner. The strength and good appearance of the Curtis lock-miter joint, as shown at the left, far exceed the old style nailed butt joint as shown at the right.

When the balusters are toe-nailed to the treads, they soon work loose and they do not resist outward thrusts. Figure 10 shows how balusters on Curtis open string stairs are dovetailed into the treads, which firmly secures the base of the balusters to the treads and gives them something to rest upon. The dovetailed portion of each baluster is intended to be nailed into the tread. This



Fig. 4. The treads and risers are tongued and grooved together.



Fig. 5. Face stringers are tenoned to fit into a mortise in the corner or landing newels.

Fig. 6. Face stringers are secured on the inside by means of cleats screwed to the stringer and newel.

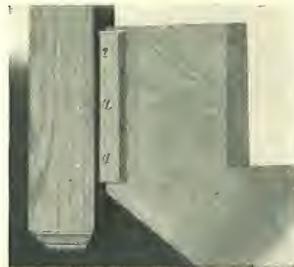




Fig. 7. Round starting newels and balusters on Curtis stairs are dowel-pinned to the solid built up starting tread.



Fig. 8. Square newels are tenoned to fit into a mortise in the tread. Stability and strength in the balustrade result.

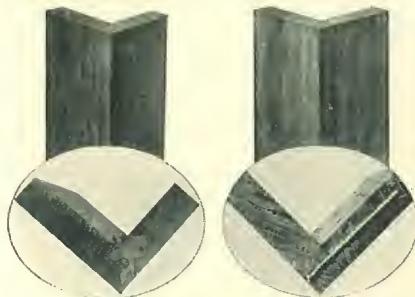


Fig. 9. The Curtis nailless lock-miter joint (at the left) is a decided improvement over the common nailed butt joint (at the right).

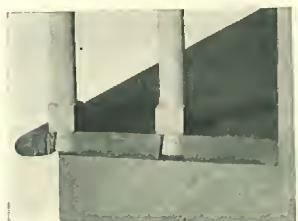


Fig. 10. Balusters are dovetailed into the treads.

Fig. 11. The dovetailing is concealed by strips of nosing and molding mitered to fit the treads. This allows no end grain to show.

enables it to resist ordinary outward thrusts. Then in Figure 11 is shown how the dovetailing is concealed by strips of nosing and molding that are cut to length and mitered to fit into the mitering of the treads. This mitering and cutting to length is done in the Curtis factory and the time of the carpenter on the job thus saved.

Goosenecks and easings are securely fastened to the hand rail by a bolt and held in place by dowel pins, as shown on the end of the gooseneck in Figure 12. Being so well fastened the gooseneck or easing cannot get "out of line" with the rest of the balustrade, for the bolt enables the carpenter to tighten up the railing and make a close fitting joint. Such construction is far superior to toe-nailing.

With each stairway made at the Curtis factory



a blue print is furnished as a guide to the builder for installing the stairs in the home. This blue print shows just where every piece goes, for each piece is numbered. Thus Curtis stairs are easily put together. There is practically no work for the carpenter to do aside from assembling the stair. He has little cutting and sandpapering to do, for these things have been done at the factory. He needs very few nails and those small ones; the wedges for the treads and risers are even furnished along with the stairs.

Because the Curtis Companies are proud of the material and workmanship in their stairs, they are anxious that the stairs arrive on the job in the same condition they leave the factory. Therefore the several pieces are carefully wrapped in paper and boxed. The stringers and rails are put into the long box seen in Figure 14, the newels are put into another box not too heavy for handling, and the balusters and all small pieces are put into a third box. The stairs arrive on the job in good order, clean and ready to be assembled.

On the following pages several stair designs are illustrated. Naturally, it would be impossible to show stairs of every possible plan. Some stairs must have more and some fewer steps; others have or have not platforms, turns, etc. Just bear in mind that these stairs are suggestions only; that the necessary cut-to-fit parts will be furnished for complete stairs of practically any plan.



Fig. 12. *Curtis goosenecks, easings and volutes, which are dowled and bolted to the hand rail, cannot get loose after being put in place.*

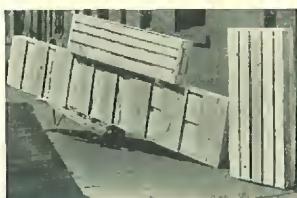
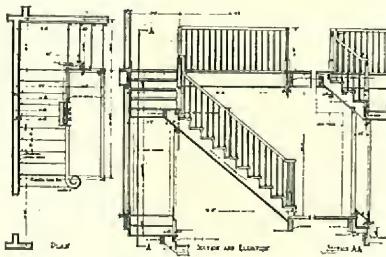


Fig. 14. *Ready to ship. All pieces are carefully wrapped and protected by packing material.*

Fig. 13. *A blue print, a dependable guide in assembling the stairway, shows where each piece goes.*



## *Stairs C-900 and C-901*

Would not a Colonial house seem unnatural without its long stairway of white spindles and mahogany handrail? Notice the graceful lines of the handrail in Stairs C-900 and the easing which connects it with the volute at the starting newel. Care has been taken to make these stately balusters neither too large nor too small, lending a quiet and dignified appearance to the stairway as a whole. For those who must economize, the bull-nose tread with its corresponding volute can be omitted and a plainer newel and a square tread substituted, as shown in Stairs C-901. A starting newel of the latter type enables the hand rail to fit down on top of it, lending the finished balustrade a very plain appearance.

The necessary cut-to-fit parts for both of these carefully designed stairways are carried in stock by the Curtis Companies. Besides the parts as listed below there are also furnished all necessary wall and face strings, coves and wedges. Both of these stairs are 3' 6" wide. No rough horses, base boards, or second floor material are included.



C-900 Colonial. (Large illustration.) Material furnished for open string, straight run, first to second floor includes: 15 risers, 14 treads, including bull-nose starting tread and riser C-907, 1 nosing, 31 balusters C-943, 1 starting newel C-923, 1 landing newel C-933, 1 volute, 14 feet hand rail C-953, Hand rail 2' 7" high.

C-901 Colonial. (Small illustration.) Material furnished for stairway to run 6 risers to platform and 9 risers boxed from platform to second floor includes: 15 risers, 13 treads, 2 nosings, 1 starting newel C-923, 1 half newel C-933, for landing, 1 easing, 1 gooseneck, 9 balusters C-943, 6 feet hand rail, C-953, 10 feet wall rail. Hand rail 2' 6" high. Width of stairs (boxed run) face to face of plaster 3' 1".

## *Stairs C-902 and C-903*

Since the treads and risers in all stairs are practically the same, you can readily see that the difference in design of various stairs depends upon the design of the balustrade with its newel, rail and balusters. Stairs C-902 are a typical Colonial stairway with a very small starting newel, which is so designed as to allow the hand rail to butt up against it. The balusters are square in this stair, and are therefore very plain, but do they not add a beautiful and dignified effect to the entire stairway? This form of baluster can also be used in a stairway with the bullnose tread and volute as illustrated in Stairs C-903. The latter stairway can be used in the Colonial, English, or Western house, and is subject to various finishing treatments.

All necessary wall and face strings, coves, and wedges are included with both of these completed stairs in addition to the parts listed below. These stairs are both 3' 6" wide and are carried in stock by all of the Curtis Companies. No rough horses, base boards, or second floor material are included.

C-902 Colonial. (Large illustration.) Material furnished for open string, straight run, first to second floor includes: 15 risers, 14 treads, 27 balusters C-940, 1 starting newel C-920, 1 landing newel C-930, 1 nosing, 14 feet hand rail C-952. Hand rail 2' 6" high.

C-903 Colonial, English or Western. (Small illustration.) Material furnished for open string, straight run, first to second floor includes: 15 risers, 14 treads, including bullnose C-967 starting tread and riser, 1 starting newel C-924, 1 landing newel C-930, 1 volute, 1 nosing, 14 feet hand rail C-952, 31 balusters C-940. Hand rail 2' 6" high.



## *Stairs C-904, C-905 and C-906*

Many stairs are so designed that a landing occurs about half way up. These call for a landing newel, as illustrated in Stairs C-904. Such a stair employs both a gooseneck and easing. Notice the graceful manner in which the gooseneck enables the hand rail to connect with the landing newel and how the easing enables the hand rail to start from the newel. Stairs C-905 show this same general design of balustrade with a square starting tread instead of a volute and bullnose tread for those who prefer the simpler design. Stairs C-906 are the same as C-905 but have in addition little brackets illustrated on the face stringer. They give a finished appearance to the ends of the treads and risers and add an artistic touch. The large illustration shows the beauty of the design when painted white; the small illustrations show stairways in birch finished natural.

Besides the parts as listed below there are also furnished all necessary wall and face strings, coves and wedges. All three of these stairs are 3' 6" wide. No rough horses, base boards, or second floor material are included.



C-904 Colonial. (Large illustration.) Material furnished for open string flight showing 6 risers to landing and 9 risers to second floor includes: 15 risers, 13 treads, including bullnose tread and riser C-967, 2 nosings, 1 starting newel, C-921, 1 angle newel C-931, 1 volute, 1 easing, 2 goosenecks, 10 feet hand rail C-955, 28 balusters C-941. Height of hand rail 2' 6".

C-905 Colonial, English or Western. (Small illustration at top.) Material furnished for stairs showing 6 risers to platform and 9 risers to second floor, open string, includes: 15 risers, 13 treads, 2 nosings, 1 starting newel C-921, 1 angle newel C-931, 1 landing newel C-931, 1 volute, 1 easing, 2 goosenecks, 10 feet hand rail C-955, 24 balusters C-941. Height hand rail 2' 6".

C-906 Colonial. (Lower small illustration.) Material furnished covered by description under C-905 with addition of 13 brackets C-948.

## *Stairs C-907, C-908 and C-909*

These three stairways are appropriate for either the Colonial or English home, their design being such that they will harmonize with the interior finish of either. Notice the finely proportioned balusters, which are a trifle heavier in design than some Colonial balusters. Stairs C-907 show a square starting tread and plain turned newel, over which the hand rail fits down neatly, giving a solid and substantial end to the baluster trade. Stairs C-908 are of the same design except that they have a bullnose starting tread and a beautifully shaped volute, and the newel is surrounded by balusters. Stairs C-909 are identical with C-907 with the addition of the little brackets underneath the risers. The large illustration shows white stringers, risers and balusters with mahogany treads and rail. In the small pictures stairs are shown finished natural.

Together with the parts listed below, all necessary wall and face strings, coves and wedges are furnished. These three stairs are all 3' 6" wide. No rough horses, base boards, or second floor material are included.

C-907 Colonial or English.  
(Large illustration.) Material furnished for open string, straight run first to second floor includes: 15 risers, 14 treads, 1 starting newel C-922, 1 landing newel C-932, 1 nosing, 12 feet hand rail C-954, 1 casing, 1 gooseneck, 27 balusters C-942. Height of hand rail 2' 6".

C-908 Colonial or English.  
(Small illustration at top.) Material furnished for open string, straight run, first to second floor includes: 15 risers, 14 treads, including bullnose tread and riser C-967, 1 starting newel C-922, 1 landing newel C-932, 1 nosing, 1 volute, 1 gooseneck, 12 feet hand rail C-954, 31 balusters C-942. Height of hand rail 2' 6".

C-909 Colonial or English.  
(Lower small illustration.) Material included covered by description under C-907 with addition of 13 brackets C-947.





### *Stairs C-910 and C-911*

"A flight of steps," says Lillie Hamilton French, "tells the story of a house. It gives you a man's love of splendor and magnificence and reveals his secret care and private hope." The designers of Curtis stairways have kept this thought ever in mind. Stairs C-910 are particularly suited to the English home.

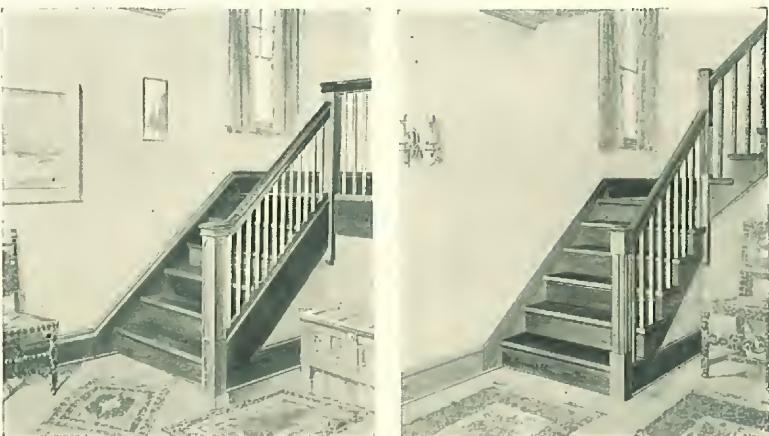
Do you know that a wooden stair newel has eight times the resistance to bending that the same size newel in marble possesses? That is why wooden stair parts and wooden details in general should be refined in character and of slender proportions. Curtis stair parts observe the relation of size and purpose. Stairs C-911 are either English or Western. No rough horses, base boards, or second floor material are furnished with either of these stairs.

### *Stairs C-910*

Material furnished for stairway showing 6 risers open to platform with nine risers boxed from platform to second floor includes: 15 risers, 13 treads, 1 starting newel C-927, 1 half newel for landing C-937, 2 nosings, 1 gooseneck, 4 feet hand rail C-950, 10 feet wall rail, 9 balusters C-945, necessary wall and face strings, coves and wedges. Height of hand rail 2' 4". Width of stairs (open run) 3' 6", (boxed run) 3' 1" from face to face of plaster.

### *Stairs C-911*

Material furnished for stairway showing 6 risers open to platform, 3 risers open and 6 boxed from platform to second floor includes: 15 risers, 13 treads, 1 starting newel C-928, 2 angle newels C-939, 1 goosenecks, 2 nosings, 7 feet hand rail C-950, 6 feet wall rail, 13 balusters C-944, necessary wall and face strings, coves and wedges. Height of hand rail 2' 4". Width of stairs (open run) 3' 6", (boxed run) 3' 1" from face to face of plaster.



*Stairs C-912 and C-913*

The beauty of Curtis stairs and stair parts is due to the fact that they are properly proportioned. You may miss some of the huge details seen in many modern houses, but you will find these slender, delicately molded forms always in good taste and, therefore, always beautiful. These stairs, which are appropriate for English or Western homes, follow out these forms.

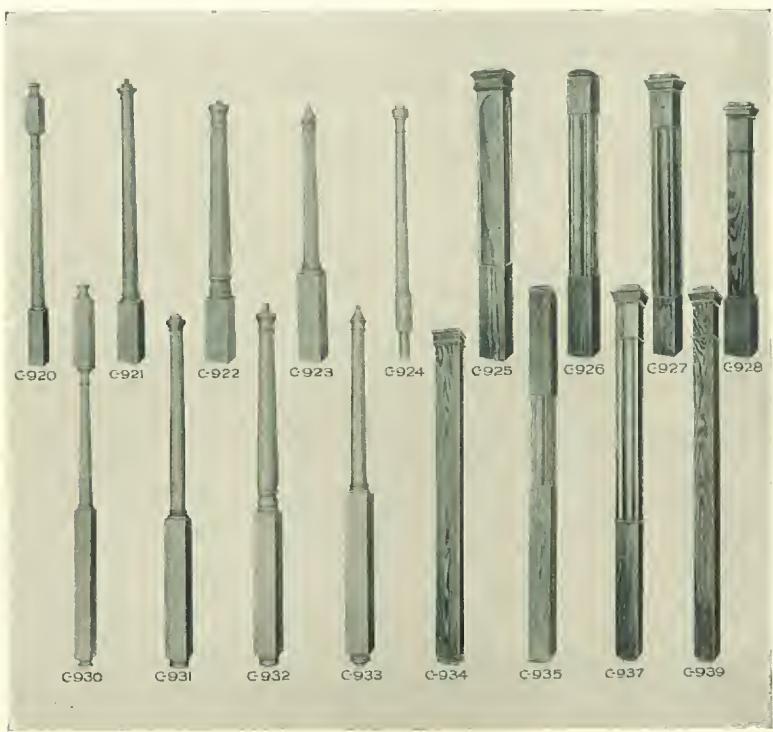
C-912 is a good example of a curb string stair; i. e., one in which the ends of the treads and risers do not show. C-913 is an open string stair. Both are good types in good taste and it is merely a matter of personal preference which one you will have. Both stairs are furnished in plain oak only, so you can stain and wax them or finish them natural, thus carrying out the traditions of the English interior.

#### *Stairs C-912*

Material furnished for curb string stairway showing 6 risers to platform and 9 risers from platform to second floor includes: 15 risers, 13 treads, 2 nosings, 1 starting newel C-925, 2 angle newels C-934, 1 landing newel C-934, 2 easings, 12 feet of hand rail C-951, 30 balusters C-946, necessary wall and face strings, cove and wedges. Width of stairs 3' 6" from face of plaster to center of balusters. Height of hand rail 2' 7".

#### *Stairs C-913*

Material furnished for stairway showing 6 risers to platform and 9 risers from platform to second floor, open string, includes: 15 risers, 13 treads, 1 starting newel C-926, 1 angle newel C-936, 1 landing newel C-935, 2 nosings, 24 balusters C-944, 14 feet hand rail C-951, necessary face and wall strings, cove and wedges. Height of hand rail 2' 7". Width of stairs from face of plaster to center of balusters 3' 6".



### *Stair Newels—Starting, Landing and Angle*

Curtis round newels are glued up solid and turned. Square newels are built-up with the Curtis joint (see Fig. 9, page 6).

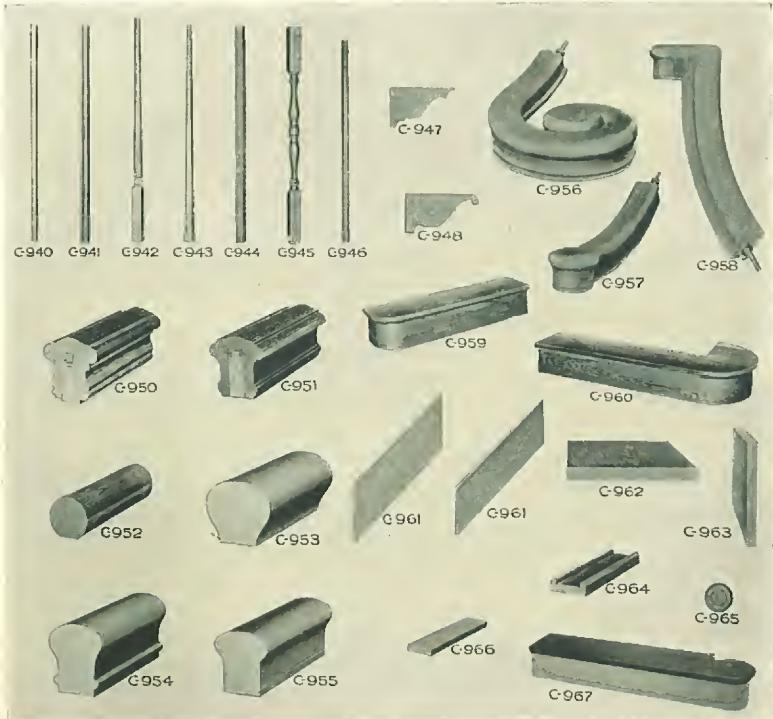
#### STARTING NEWELS

DESIGN NUMBER	SIZE
C-920	2½" x 2½" x 3' 5"
C-921	3¼" x 3¼" x 3' 2"
C-922	3½" x 3½" x 3' 2"
C-923	3½" x 3½" x 3' 3"
C-924	2½" x 2½" x 2' 7½"
C-925	4" x 4" x 3' 6"
C-926	3¾" x 3¾" x 3' 6"
C-927	3½" x 3½" x 3' 5"
C-928	3½" x 3½" x 3' 5"

#### LANDING AND ANGLE NEWELS

DESIGN NUMBER	SIZE
C-930	2½" x 2½" x 5' 2"
C-931	3¼" x 3¼" x 4' 10"
C-932	3½" x 3½" x 4' 0"
C-933	3½" x 3½" x 4' 10"
C-934	4" x 4" x 4' 8"
C-935 for landing only	3¾" x 3¾" x 4' 7"
C-936 like C-935, for angle only	3¾" x 3¾" x 5' 2"
C-937 for landing only	3½" x 3½" x 4' 7"
C-938 like C-937, for angle only	3½" x 3½" x 5' 2"
C-939	3½" x 3½" x 5' 2"

NOTE: All but C-935, C-936, C-937 and C-938 usable as landing or angle newels.



## *Stair Parts—Balusters, Brackets, Rails, Etc.*

BALUSTERS		BRACKETS		MISCELLANEOUS STAIR PARTS
DESIGN NUMBER	SIZE	DESIGN NUMBER	SIZE	
C-940	$\frac{5}{8}'' \times 1\frac{13}{16}'' \times 2' 6''$	C-947	$9\frac{5}{8}'' \times 5\frac{1}{4}'' \times \frac{3}{8}''$	C-956—Volute
	$\frac{5}{8}'' \times 1\frac{13}{16}'' \times 2' 9''$	C-948	$10\frac{3}{4}'' \times 6\frac{1}{4}'' \times \frac{5}{8}''$	C-957—Easing
C-941	$1\frac{3}{8}'' \times 1\frac{1}{2}'' \times 2' 6''$ —molded			C-958—Gooseneck
	$1\frac{3}{8}'' \times 1\frac{1}{2}'' \times 2' 9''$ —molded			C-959— $\frac{1}{4}$ Circle Tread
C-942	$1\frac{3}{8}'' \times 2' 0''$ —turned	G-950	$3'' \times 3\frac{1}{8}''$	C-960— $\frac{1}{2}$ Circle Tread
	$1\frac{3}{8}'' \times 2' 6''$ —turned	C-951	$3\frac{1}{8}'' \times 3''$	C-961—Stringer
C-943	$1\frac{3}{4}'' \times 2' 0''$ —turned	C-952	$2\frac{1}{8}'' \times 2''$	C-962—Tread
	$1\frac{3}{4}'' \times 2' 6''$ —turned	C-953	$2\frac{1}{8}'' \times 2\frac{3}{4}''$	C-963—Riser
C-944	$1\frac{3}{8}'' \times 1\frac{1}{2}'' \times 2' 4''$	C-954	$2\frac{1}{4}'' \times 2\frac{3}{8}''$	$6\frac{1}{4}'' \times 3' 6'' \times 1\frac{5}{8}''$
	$1\frac{3}{8}'' \times 1\frac{1}{2}'' \times 2' 6''$	C-955	$2\frac{1}{8}'' \times 2\frac{1}{4}''$	C-964—Shoe $\frac{3}{4}'' \times 2\frac{1}{2}''$
C-945	$1\frac{3}{8}'' \times 1\frac{1}{2}'' \times 2' 4''$ —turned			C-965—Rosette; diam. 5"
	$1\frac{3}{8}'' \times 1\frac{1}{2}'' \times 2' 6''$ —turned			C-966—Fillet $\frac{3}{8}'' \times 1\frac{3}{8}''$
C-946	$1\frac{1}{8}'' \times 1' 11''$ —round			C-967—Bullnose Tread

# *Curtis Stairs Are Trademarked*

To be assured of getting beauty, stability and economy in your stairs look for the CURTIS trademark.

On Curtis complete stairways this trademark will be found on the starting, landing, and angle newels and on the hand rail. It is not applied until after each individual part of the stairway has been carefully inspected. Thus you are assured of beautiful design, good material and excellent workmanship. Look for this trademark



It identifies every genuine piece of Curtis Woodwork. You will find many imitations of Curtis designs and some that are claimed to be just as good. But without this trademark you do not receive Curtis quality—an intrinsic value that unites appearance, utility and Curtis intent.

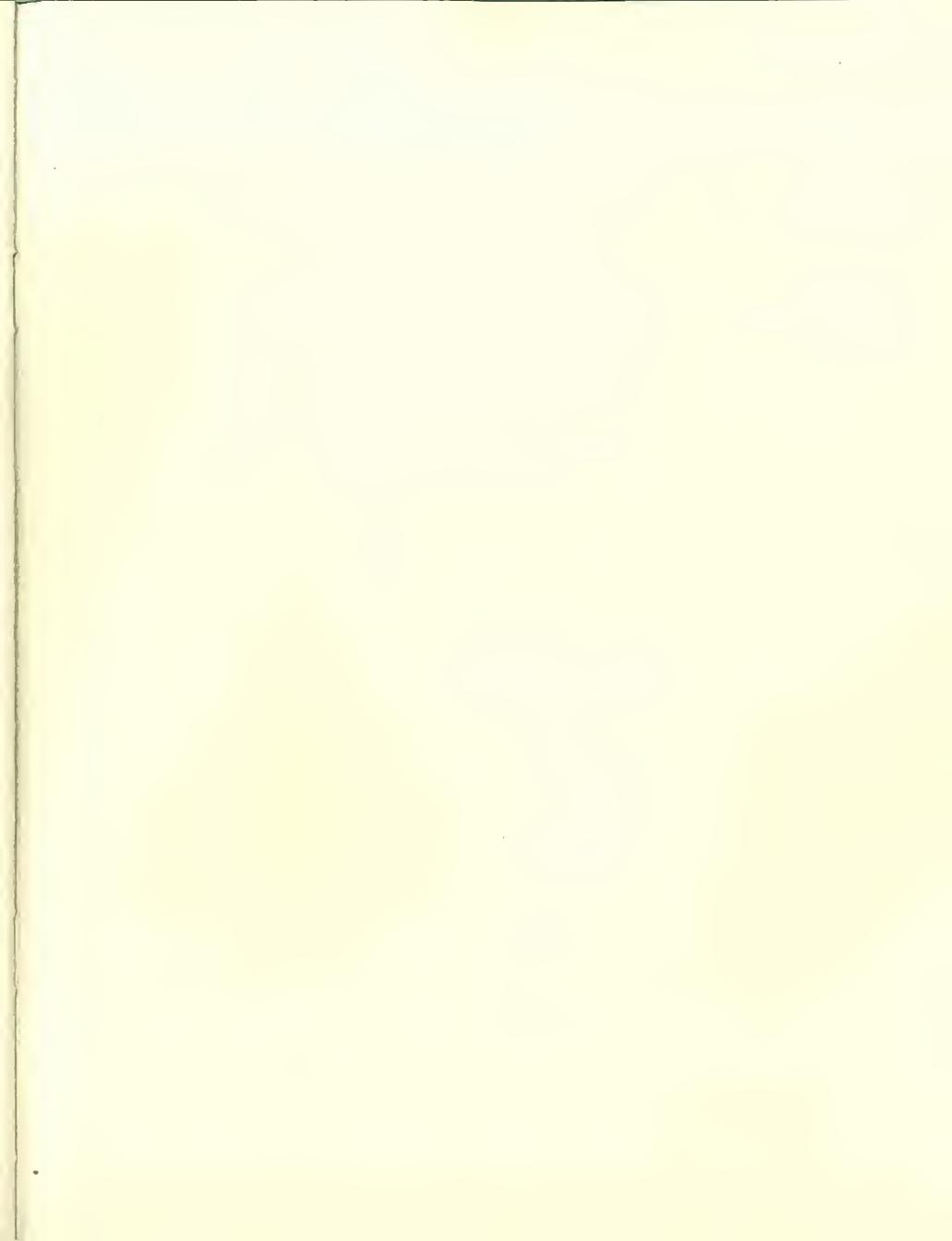
Go to your Curtis dealer before ordering your stairway. He will furnish you with stairs that have all the points of beauty and construction that we have described in this book.

## CURTIS COMPANIES SERVICE BUREAU CLINTON, IOWA

*Representing the following manufacturing and distributing plants:*

CURTIS BROS. & Co.	CLINTON, IOWA
CURTIS & YALE CO.	WAUSAU, WIS.
CURTIS-YALE-HOLLAND CO.	MINNEAPOLIS, MINN.
CURTIS SASH & DOOR CO.	SIOUX CITY, IOWA
CURTIS, TOWLE & PAYNE CO.	LINCOLN, NEB.
CURTIS, TOWLE & PAYNE CO.	TOPEKA, KANS.
CURTIS DOOR & SASH CO.	CHICAGO, ILL.
CURTIS DETROIT CO.	DETROIT, MICH.
CURTIS COMPANIES INCORPORATED	CLINTON, IOWA

*Sales offices of CURTIS COMPANIES INCORPORATED located in*  
**PITTSBURGH, PA.**      **NEW YORK, N. Y.**      **BALTIMORE, MD.**



<sup>1866</sup>  
**CURTIS**